

Human Organ Systems Conference



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Overview

The Healthy Organ Systems Conference Culminating Activity has been designed for the Understanding Life Systems: Cells strand of the Ontario Science and Technology Curriculum for grade 8. In teams of two to three, students will delve more deeply into the selected organ system and look for connections between tissue types which comprise organs and materials they may use to build a model of the system. They will also be required to research how technology has had an influence on viewing the cell and what benefits can be linked to their organ system. Additionally, the team will be researching one disease which affects their organ system and preventative measure which can be put in place to lower the chance of developing the disease (if possible). Presentations take place the day of the conference with all groups presenting during a double period. Models will be on display for students to complete a gallery walk once all presentations are completed.

Curriculum Expectations

Extracted from The Ontario Curriculum, Grade 8, Science and Technology Ministry document, the activity will address the following:

Fundamental Concepts:

- Systems and Interactions
- Structure and Function

Overall Expectation:

- Assess the impact of cell biology on individuals, society and the environment

Big Ideas:

- Cells are the basis of life
- Cells organize into tissues, tissues into organs, organs into organ systems and organ systems into organisms
- Healthy cells contribute to healthy organisms
- Systems are interdependent

Specific Expectations can be found in Part B: Notes to Teacher, under Implementation Plan for Culminating Activity.

Timing

This culminating activity is designed to end off the unit and will take approximately two weeks to complete. This is based on having two science and art periods per week, with each period lasting 45 minutes. In total, 8 classes will be devoted towards completing this activity. This activity is an in-school activity only; products may not go home until they have been presented.

Assessment

This activity is a summative assessment and should be allocated 40% of the final Cells unit. Although this is a team activity, there are many opportunities for individual assessment and each student within a team may receive a different mark. The following are the components of the activity:

Written report	25%
Pamphlet	5%
Model	30%
Presentation/Evaluation	40%
→ Group	
→ Peer feedback	
→ Conference notes	

The rubric for the activity can be found in Appendix A.

Human Organ Systems Conference

Welcome Dr. _____, Dr. _____ & Dr. _____

Thank you for taking the time to speak at the upcoming Healthy Organ Systems Conference regarding the _____ organ system, your area of specialty!

We ask that you bring a model of your system to share with your fellow colleagues as well as literature (i.e. pamphlets) regarding your organ system. Your team has been allotted 15 minutes to present at this year's conference.

Thank you for donating your time to this year's conference,

Healthy Organ System Conference

D. Remedios

President

Your team, consisting of two or three specialists, will be responsible for presenting your organ system at the conference in a manner which addresses the following:

1. Understanding and relaying the importance of technology and its impact on cell research regarding your organ system
2. To model for attendees the vocabulary used when discussing your organ system
3. To design and construct a model of the organ system for attendees to visually see and touch
4. To understand the organization of cells in an organism and to speak about one disease which affects your system

All of the above expectations are included in the breakdown of each component listed below. The Human Organ Systems Conference has high standards of their presenters and requires presenters to bring all the components, listed below, to the conference (also checklist found in Appendix F).

HOW WILL I BE ASSESSED?

i) Report (25%)

A report must accompany the model and is due the day of the conference.

The report (one report per group) should contain all the listed **elements**:

- + A cover page with the name of the organ system, doctor's names, the course, teacher's name and date of the conference. Here is an example....

Circulatory Organ System

Name: Dr. _____, Dr. _____ and
Dr. _____

Course: Science

Teacher: Ms. Remedios

Date: Date of the conference

- + Your original phase one template with any sketches/plans with your teachers initials confirming they have seen the plan
- + The name, function and importance of the human organ system you are covering (do not copy and paste from the internet and books, I want to read and hear what YOU think)
- + A list of the different materials used to build the system and why you chose them
 - Why you decided to use this particular material to design your organs (e.g. did you choose a material which is stretchy for the stomach, why? Our stomach expands when eating). **NOTE:** It is important to choose the materials which you will be using based on what tissues comprise the organ (think back to connective, epithelial, muscular and nervous tissue)
- + Include an (ONE) example of a disease which affects your organ system, how it affects it and what you can do to prevent yourself from developing the disease
- + Include how the impact of research in cell biology has helped your organ system

NOTE: It is essential that the report include all of the above with sufficient details in order to achieve a level 4 on this assignment

ii) Literature: Pamphlet (5%)

- + Create a pamphlet for your organ system which summarizes the important KEY points from your written report. You will need 5 copies of your pamphlet. One must be attached and handed in with your report and the rest will circulate around the class during your presentation.

iii) Design: Organ System Model (30%)

Your team of fellow doctors are to create a model of the human organ system you choose (i.e. one of the ten organ systems we have covered).

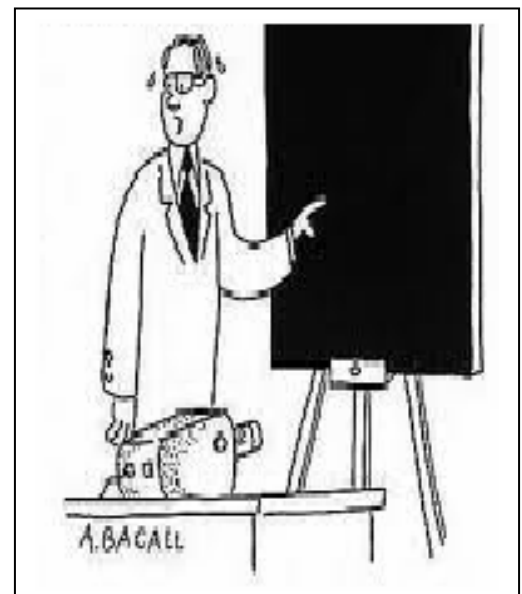


Materials:

Make sure you take proportion into account! The model system must be made out of household items (i.e. only items you find around your house: recyclable materials, food items, fabrics etc. or around the classroom. **DO NOT** purchase model organs for this project). You will be required to bring them to class to work on the design. WARNING: Purchasing model organs and placing them within a system will result in an automatic grade of 0. **PLEASE ASK** before using household or classroom items.

iv) Presentation (40%)

Dress up! Play the part of specialists in your area of medicine. The day of the conference your report, model and pamphlets are due. Your self and peer evaluations will be compiled in an envelop (I will provide) and handed in along with your report. Self and peer evaluations will be part of your presentation mark. Please see attached rubric for assessment criteria.
(see Appendix A)



Phase One Outline:

With your group, make a plan of how you would like to construct your organ system. Remember to think about what major organs comprise the organ system and what materials are most suitable to construct the organs. Your plan should be a sketch of what you intend to do/build. Make sure you label the organs in your system as well as label the system you are building and decide upon group member's roles. The plan is due on _____ (following science period). (When you hand in the plan, we will have a group conference to work out any concerns. It is up to your team to hand in/book a conference with the teacher).

Date of group conference with teacher: _____

Due date of project: _____

I have read the outline of this assignment and understand that my team members are counting on me to contribute towards our mark. I understand that if I do not contribute, there will be academic consequence.

Student's name (printed): _____ Students signature: _____

Parent's signature: _____ Date: _____

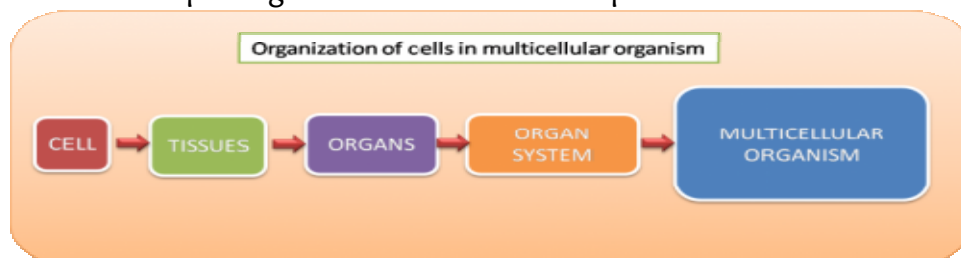
Here are the tasks which need to be completed over the next two weeks. You will have four science and four art periods to complete the project. Science will take place in the computer lab.

Task 1: Team meeting! Meet with your pre-assigned team members. Sign up for an organ system and begin to fill in the Phase One Outline (refer to your notes). It is due next science class.

Task 2: Conference time! It is your team's responsibility to book a conferencing time with me. This is not graded but will help you to sort out any problems or any further clarifications you need.

Task 3 & 4: Materials and research. Bring in any materials you believe will help you construct your model. You may leave materials in the class as you will be using both science and art classes to construct your model and conduct your research. You will be filling in your self and peer mid-point check evaluations.

Task 5: You will have one period at the end to practice your presentation and put the final touches on your model and report. You will be filling in your final self and peer evaluation forms during this class as well and placing them inside the envelope.



Unit Overview

The suggested unit outline shows how the unit could be covered in 20 hours. It is based on 45 minute periods, and 3 hours have been built in to take into account possible set-backs.

Unit Outline

Course: Science **Textbook:** Investigating Science and Technology 8 (Pearson) **Unit:** A. Cells

Day	Section	Description/Expectation	Homework	Discuss/ Collect	Assessment	Resource/ Reminder
1		Prior Knowledge: Students may not have much prior knowledge about cells, microscopes, diffusion or osmosis. However, they should have a sense of the characteristics of living things. Find out what students know about cells using K/W/L/ chart	--	--	K/W/L/ chart (Assessment for learning)	--
	1.0	Cells are the basic units of all living things - students will understand that the cell is the structural unit of life <i>Expectations: --</i>	Create a T-chart of living and non-living things	Discuss in following class	--	Text pg. 10-11
	1.1	Living Things and Cell Theory - students will learn the postulates of the cell theory - students will be investigating compound light microscopes and labeling a diagram of the parts and associated functions <i>Expectations:</i> <i>1.1 assess the role of selected technologies in enhancing our understanding of cells and cellular processes</i> <i>3.1 demonstrate an understanding of the postulates of cell theory</i>	Study the postulates of the cell theory and microscope parts	--	Quiz: living vs. non-living items, postulate theory and microscope parts (Assessment as/of learning)	Text pg. 12-14
2	1.2	Comparing Plant and Animal Cells - students will learn plant and animal cell structures and organelles -plant and animal cells perform some similar functions, such as converting energy and getting rid of wastes -plant cells have a unique function: $\text{CO}_2 + \text{H}_2\text{O}$ (food) <i>Expectations:</i>	Prepare a chart listing the organelles of an animal cell and plant cells and their associated functions	Discuss in class what organelles are in common between the two types of cells and why this occurs	Look to see students are familiar with names and functions and check charts (Assessment for learning)	Text pg.17-20 Microscopes + empty slides and slide covers

		<p>1.2 assess the potential that our understanding of cells and cell processes has for both beneficial and harmful effects on human health and the environment</p> <p>3.2 identify structures and organelles in cells</p> <p>3.3 compare the structure and function of plant and animal cells</p>				
3	1.3	<p>The Flow of Materials Into and Out of Cells</p> <ul style="list-style-type: none"> - students will understand cells and permeability -the terms diffusion and osmosis (water only) <p>Expectations:</p> <p>1.1 (listed above)</p> <p>1.2 (listed above)</p> <p>3.4 explain the processes of diffusion and osmosis and their roles within a cell</p>	Create a mind-map regarding the cell (in the middle). Advise students to leave lots of space between items so that they can return at any time to add more information (i.e. definitions, sketches etc.)	Collect to check for progress but give back as soon as possible so they may add information	Students will continue to add as the unit progresses (Assessment as learning)	Text pg. 24-27 An experiment with a permeable mesh to demonstrate movement into/out of a cell
4	1.0-1.3	<p>Review</p> <p>As a class completing Chapter Review 1.0, Questions 1-13</p>	Complete any of the Chapter Review questions missed	--	Quiz regarding Chapter Review 1.0 (Assessment of learning)	Text pg. 32-33
5		<p>Prior Knowledge:</p> <p>In previous grades, students have learned of plants, animals and biodiversity. They will extend their knowledge to include cell diversification and specialization for plant and animal cells</p>				
	2.0	<p>Cellular processes sustain living things</p> <ul style="list-style-type: none"> -students will learn the functions that living organisms perform in order to stay alive <p>Expectations: --</p>	--	--	--	Text pg. 36-37
	2.1	<p>Unicellular Organisms</p> <ul style="list-style-type: none"> -students will learn that unicellular organisms are 	Questions 1-3, 5	Discuss answers to questions	--	Text pg. 38-40

		<p>essential for life on Earth</p> <ul style="list-style-type: none"> -uni/multicellular organisms carry out many of the same functions -unicellular organisms are varied in structures and adaptations -use microscope to view dry mount slides <p><i>Expectations:</i> 1.2 (listed above) 3.5 identify unicellular organisms and multicellular organisms and compare the ways in which they meet their basic needs</p>	-draw the organism you see + structures, organelles, magnification			-microscope +dry mount unicellular slides
6	2.2	<p>Multicellular Organisms and Cell Specialization</p> <ul style="list-style-type: none"> -students will learn that diffusion and osmosis limit the size of cell -multicellular organisms use specialized cells to carry out activities to meet basic needs -specialized cells depend on other specialized cells -use microscopes to view dry mount slides <p><i>Expectations:</i> 3.4 (listed above) 3.5 (listed above)</p>	<p>Questions 1-4</p> <p>Create chart comparing uni- and multicellular organisms</p> <p>-draw the organism you see + structures, organelles, magnification</p>	Discuss answers to questions	Check progress of mind map (Assessment as learning)	<p>Text pg. 43-46</p> <p>-microscope + dry mount multicellular slides</p>
7	2.3	<p>Plant and Animal Cellular Processes</p> <ul style="list-style-type: none"> -students will learn that cellular processes are continuous, transforming energy and processing and transporting of materials is key and cells are replaced through cell division <p><i>Expectations:</i> 1.1 (listed above) 1.2 (listed above) 3.1 (listed above) 3.5 (listed above)</p>	<p>Relate the cell model to another aspect of life, e.g. the cell works like an office would work. What are the structures doing?</p> <p>Use prior knowledge</p>	Collect	Use as Chapter Review quiz mark Assessment as/for learning	Text pg.50-53
8		<p>Prior knowledge:</p> <p>Students have previously studied human organ systems in grade 5. They will further delve into interactions of interdependent systems. The following chapter will be broken down to cover the material extensively, using additional material, models, demonstrations etc.</p>	--	Which organ system do you think is most important? → All are equally important and needed	--	--

	3.0	Healthy organisms depend on the interaction of healthy cells, tissues and organs -for organisms to live a lot of co-ordinated activity occurs	--	Discuss importance of knowing what each system does	--	Text pg. 58-61
	3.1	From Cells to Tissues to Organs -students will learn multicellular organisms are made up of cells that are organized into tissues, organs, organ systems and into an organism -the four main types of animal tissues, three types of plant tissues	As a class we will fill in worksheet (Appendix ???)	--	--	Text pg. 62-64 Overhead projector, markers, worksheets
9	3.2	Interdependent Organ Systems -students will learn that individual organs perform specific functions -organ systems work together to keep an organism functioning properly -focusing upon digestive and respiratory organ systems <i>Expectations:</i> <i>3.6 describe the organization of cells into tissues, organs and systems</i>	Fill in a chart with the headings: Organ system, Major Organs and Function of Organ System (Appendix ???)	--	Walk around to check for completion (Assessment as learning) Exit ticket	Text pg.67-70 Bill Nye video regarding respiration and digestion Models of the respiratory and Digestive systems Laptop SMARTboard Worksheets
10	3.2	Interdependent Organ Systems -focus on skeletal, circulatory and muscular <i>Expectations:</i> <i>3.6 describe the organization of cells into tissues, organs and systems</i>	Continue to fill in chart	Check for completion	Quiz regarding levels of organization for plant and animal tissues and digestive and respiratory systems (Assessment of learning) Exit ticket	Text pg.67-70 Model of human heart Skeleton Knee joints SMARTboard 4 Pork hearts 4 Foil trays 2Stethoscopes Latex gloves Worksheets Youtube audio clip of beating heart
11	3.2	Interdependent Organ Systems -focus on nervous, integumentary and endocrine <i>Expectations:</i> <i>3.6 describe the organization of cells into tissues, organs and</i>	Continue to fill in chart	Check for completion	Quiz regarding skeletal, circulatory and muscular organ systems Exit ticket	Text pg. 67-70 Posters of nervous and skeletal system BrainPop

		systems				animation of nervous system and endocrine system A ball to play Marco Polo (student is blindfolded and needs to use senses)
12	3.2	Interdependent Organ Systems -focus on reproductive, lymphatic and excretory <i>Expectations:</i> 3.6 describe the organization of cells into tissues, organs and systems	Continue to fill in chart	Check for completion	--	Text pg. 67-70 4 Pork kidneys 4 Foil trays Latex gloves SMARTboard Worksheet Youtube clip –opening scene of “Looks who’s talking” (sperm fertilizing egg) BrainPop animation for the kidneys
	3.3	The Impact of Research in Cell Biology -students will learn the importance of technology in advancing our knowledge of the cell and its processes -how our manipulations of cells can benefit or harm society and/or the plant and all the other organisms whom we share it with -touch on topics: work to stop cancer, damaged spinal cords, infectious disease and world food production <i>Expectations:</i> 1.1 (listed above) 1.2 (listed above)	--	--	--	Text pg. 72-75
13		Discuss Culminating Task, assign partners and have sign up for systems.	Phase One Outline to be completed	--	--	See Culminating Activity

Implementation Plan for Culminating Activity

Unit: Cells

Specific Curriculum Expectations

This activity will require students to:

1. Relating Science and Technology to Society and the Environment:

(1.2) assess the potential that our understanding of cells and cell processes has for both beneficial and harmful effects on human health and the environment

2. Developing Investigation Skills

(2.5) use appropriate science and technology vocabulary in oral and written communication

3. Developing Communication Skills

(2.6) use a variety of forms to communicate with different audiences for a variety of purposes

4. Understanding Basic Concepts

(3.6) describe the organizations of cells into tissues, organs and systems

Task breakdown		[Periods SCI = science, ART = art]	
CLASS	ACTIVITY	ASSESSMENT	PERIOD/ RESOURCE/ REMINDER
1	<p>Present Activity, introduce groups and assign Phase One Outline</p> <ul style="list-style-type: none">- Have the students sit in pre-assigned teams (2 or 3 students)- Read over and discuss the culminating activity, stress the importance of each member contributing and go over the rubric- Based on a lottery systems, teams will choose which organ system they would like to specialize in- Phase One outline is assigned and students have the rest of the period to fill it in. It will be due next Science (Sci) period- Students are to start bringing materials to store in the class	<ul style="list-style-type: none">- Anecdotal notes to see which students are contributing to the outline – see Appendix G	<p>SCI</p> <ul style="list-style-type: none">- 1 copy of the students handout – see Part A- 1 copy of rubric – see Appendix A- 1 copy of Phase One Progress Form (per group) – see Appendix B <p>- Reminder: Set out art supplies for tomorrow's class for students to rummage through and clear space for students to start storing materials</p> <p>- Reminder: Kindly, remind custodian about project and that students will be visiting</p>
2	<p>Phase One and Materials</p> <ul style="list-style-type: none">- Students will continue to work on Phase	<ul style="list-style-type: none">- Anecdotal notes- I will be going around to check on	<p>ART</p>

	<p>One, brainstorm ideas and how they will divide up the work</p> <ul style="list-style-type: none"> - Students may rummage through art supplies, check out recyclable materials from the custodians room - Conference with teacher about group dynamics - Students may begin to book conference times for tomorrows class 	group dynamics, talking to members	Reminder: Book computer lab
3	<p>Research in computer lab</p> <ul style="list-style-type: none"> - Teams will have conferences with the teacher - Students will begin to compile information regarding their system - Students will hand in Phase One Outline 	<ul style="list-style-type: none"> - Assessment will take place during conferences - Will use checklist to view group co-operation –see Appendix E 	<p>SCI</p> <ul style="list-style-type: none"> - Give students list of website resources to view for accurate information – see Appendix J - Conference Notes Form – see Appendix C - 1 copy of Mid-Way Checkpoint – see Appendix D
4	<p>Work period</p> <ul style="list-style-type: none"> - Students are instructed to use their time wisely - Students will hand in mid-way checkpoint 	<ul style="list-style-type: none"> - Assessment through mid-way checkpoint 	<p>ART</p> <p>Reminder: Book computer lab</p>
5	<p>Research in computer lab + work period</p> <ul style="list-style-type: none"> - Students are instructed to use their time wisely 	Checklists and anecdotal notes for the next three classes	SCI
6	<p>Work period</p> <ul style="list-style-type: none"> - Students are instructed to use their time wisely 	(above)	<p>ART</p> <p>Reminder: Book computer lab</p>
7	<p>Research in computer lab + work period</p> <ul style="list-style-type: none"> - Students are instructed to use their time wisely 	<ul style="list-style-type: none"> - Monitor students are using computer lab time appropriately 	<p>SCI</p> <p>1 copy of Project Completion Checklist – see Appendix F</p> <p>Reminder: Last day to be in computer lab to do research</p>
8	Presentation practice		ART

	<ul style="list-style-type: none"> - Students will put the finishing touches on their projects and will rehearse their presentation - Hand out copies of self and peer evaluation forms (can be completed at home) 		<p>1 copy of both Final Self and Peer Evaluation Forms – see Appendices H and I</p> <p>Reminder: Set up class for conference tomorrow: desk re-arranged, water, juice, snacks for presenters (check student profile binder for allergies) Reminder: Bring envelopes to place forms in for tomorrow</p>
9	<p>Conference + gallery walk (after presentations)</p> <ul style="list-style-type: none"> - Reports + pamphlet + model due - Final self and peer evaluations due in envelope 	Assessment for Summative Project Rubric – see Appendix A	SCI & ART DOUBLE PERIOD (in classroom)

Prior Knowledge and Skills Required

This activity can not be assigned until all the organ systems have been covered. We will only be looking at certain systems: digestive, respiratory, nervous, integumentary, endocrine, skeletal, circulatory, muscular, reproductive, lymphatic and the excretory organ systems.

N.B. Although we cover the reproductive organ system it has been left out as an option as students may feel uncomfortable building the associated model. Therefore, there are a total of 10 possible organ systems to build in teams of 2 or 3 students.

Over the course of the unit, students should have lots of interactions with models, visuals and real organs (if possible). From the beginning of the unit until the end, students will be introduced to important terminology that is required to be used during the presentation and in the written report. They can refer to their mind-maps created during lesson 2 for terminology and concepts. Students were given back their mind-maps to continue adding terminology over the progression of the unit.

Prior to this report, students should already have a good background in understanding how to research, reference and write a proper report (e.g. typed, font 12).

Students will be required to work on their cooperation, communication and intrapersonal as well as interpersonal skills.

Cross-curricular connections (Math and Geography)

Course: SCIENCE

Unit : A. CELLS

Sections	Math	Geography
1.1 Living Things and Cell Theory	--	--
1.2 Comparing Plant and Animal Cells	Number Sense and Numeration -solve problems that require conversions involving metric units	--
1.3 The Flow of Materials Into and Out of Cells	--	--
2.1 Unicellular Organisms	Number Sense and Numeration -represent, compare and order rational numbers	--
2.2 Multicellular Organisms and Cell Specialization	Number Sense and Numeration -translate between equivalent forms of a number -identify and describe real-life situations involving two quantities that are directly proportional	--
2.3 Plant and Animal Cellular Processes	Measurement -research, describe and report on applications of volume and capacity measurement	--
3.1 From Cells to Tissues	--	--
3.2 Interdependent Organ Systems	--	--
3.3 The Impact of Research in Cell Biology	Number Sense and Numeration -represent, compare and order rational numbers	Migration -Identify the push and pull factors that influence people to move Economic Systems

Accommodations:

Instruction

- Groups have been pre-assigned to arrange students in teams which will be most beneficial to all students
- They have the opportunity to work on their assignment outside of science and art class time, with the special education resource teacher (SERT) [Enforce that no students take home any part of the task, but flexibility is encouraged in extenuating circumstances]

Assessment

- Students with special needs will be given a task by the team (approved by the teacher) and that will constitute their contribution to the team. For example, if a student struggles with writing, they have the opportunity to present orally, draw it out, have a private conference to communicate ideas etc.,

Materials and Resources for Students

Materials

- Students are to bring materials from home to design and construct their model organ system. They have permission to use whatever art materials are put out on a designated table in the classroom as well they can visit the custodial workroom to find items there (this has already been cleared with staff).

Websites for Students:

www.brainpop.com

<http://www.can-do.com/uci/lessons98/BodyBuilder.html>

http://www.biology4kids.com/files/systems_main.html

Criteria	Level 1 (D) Developing	Level 2 (C) Satisfactory	Level 3 (B) Good	Level 4 (A) Exemplary
<u>WRITTEN REPORT (25%)</u> Organization (5%) <ul style="list-style-type: none"> - Information Progress report (5%) Content (10%) <ul style="list-style-type: none"> - Elements Sources (5%) <ul style="list-style-type: none"> - APA format <u>PAMPHLET (5%)</u> <ul style="list-style-type: none"> - All members contribute - concise summary of key points from written project 	<ul style="list-style-type: none"> • Information appears to be disorganized • Progress report has not been attempted • One or more topics were not addressed • Sources (information and graphics) are not documented in APA format • Members did not contribute to pamphlet • The pamphlet has not been attempted 	<ul style="list-style-type: none"> • Information is somewhat organized but paragraphs are not well-constructed • Progress report has been attempted and some areas are answered • All elements are addressed and some questions have sufficient information • All sources (information and graphics) are accurately documented, but many not in APA format • Most students in the group can accurately answer most questions related to facts in the pamphlet • The pamphlet has key points 	<ul style="list-style-type: none"> • Information is adequately completed with well-constructed paragraphs • Progress report has been completed and is clear and logical with most group roles designated • All elements are addressed and most questions have sufficient information • All sources (information and graphics) are accurately documented, but a few are not in APA format • All students in the group can accurately answer most questions related to facts in the pamphlet • The pamphlet is a concise summary of key points from the report 	<ul style="list-style-type: none"> • Information is thoroughly and clearly completed with well-constructed paragraphs and subheadings • Progress report is completed and is clear and logical with all group roles designated • All elements are addressed and answered with sufficient information • All sources (information and graphics) are accurately documented in APA format • All students in the group can accurately answer all questions related to facts in the pamphlet • The pamphlet is a concise summary of key points from the written report
<u>MODEL (30%)</u> <ul style="list-style-type: none"> - Construction (materials) (15%) - Scientific knowledge (10%) - Labelled (5%) 	<ul style="list-style-type: none"> • Inappropriate materials were selected and contributed to a product that did not resemble the system • Explanations by several members of the group do not illustrate much understanding of scientific principles underlying the construction and modifications • System and organs are not/inaccurately labelled 	<ul style="list-style-type: none"> • Appropriate materials were selected • Explanations by most group members indicate relatively accurate understanding of scientific principles underlying the construction and modifications • System and some organs are labelled 	<ul style="list-style-type: none"> • Appropriate materials were selected and there was an attempt at creative modification to make them appropriate for the system • Explanations by all group members indicate a relatively accurate understanding of scientific principles underlying the construction and modifications • System and most organs are accurately labelled 	<ul style="list-style-type: none"> • Appropriate materials were selected and creatively modified in ways that made them appropriate for the system • Explanations by all group members indicate a clear and accurate understanding of scientific principles underlying the construction and modifications • System and all organs are accurately labelled

<p><u>PRESENTATION/ EVALUATION (40%)</u></p> <ul style="list-style-type: none"> - Preparedness of presenters/presentation (10%) - Use of terminology and convention (10%) - Peer feedback forms (10%) - Progress conference notes (10%) 	<ul style="list-style-type: none"> • Presenters are unprepared (in regards to model, pamphlet, report) • Student uses appropriate terminology with limited accuracy • Rarely listens to, shares with, and supports the efforts of others in the group. Often is not a good team member. • Student used work period with limited effectiveness 	<ul style="list-style-type: none"> • Presenters lacks some preparation (in regards to model, pamphlet, report) • Student uses appropriate terminology with some accuracy • Often listens to, shares with, and supports the efforts of others in the group but sometimes is not a good team member. • Student used work period with some effectiveness 	<ul style="list-style-type: none"> • Presenters are somewhat well-prepared (in regards to model, pamphlet, report) • Student uses appropriate terminology with accuracy • Usually listens to, shares with, and supports the efforts of others in the group. Does not cause "waves" in the group. • Student used work period with considerable effectiveness 	<ul style="list-style-type: none"> • Presenters are very well-prepared (in regards to model, pamphlet, report) • Student uses appropriate terminology with a high degree of accuracy • Almost always listens to, shares with, and supports the efforts of others in the group. Tries to keep people working well together. • Student used work period with thorough effectiveness, always on task
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PHASE ONE PROGRESS FORM

Names: _____

Date: _____

Organ system: _____

NAMES	What are my skills? What skills do I possess which will enhance this project?	What am I going to research?	What am I going to build?	What materials am I going to look for? What materials am I thinking about?
Dr. _____				
Dr. _____				
Dr. _____				

Please book conference time with me when this form is completed. To be handed in.

TEACHER CONFERENCE NOTES

- ☐ Students have completed the Phase One Progress Form
- ☐ Phase One Progress Form not fully completed

Items for discussion: _____

What are your concerns? _____

What do you need help with? _____

Recommendations and goals: _____

Follow up strategies: _____

Team members: _____	Date: _____
_____	Date: _____
_____	Date: _____

Teachers notes:
(dynamics of teams working, all members were contributing during conference, teams members understood the assignment)

MID-WAY CHECKPOINT!
Self and Peer Evaluation Form for Group Work

Name: _____
Date: _____

	Seldom	Sometimes	Often
Contribute my ideas			
Listened and respected others ideas			
Compromised and co-operated			
Helped to solve problems			
Concentrated when working			
Did my share when working in the group			

What am I contributing towards (model, report, presentation, research, materials)

Something new I learned today

Are all the team members contributing to the project? Whether your answer is yes or no, you need to explain. (Although this is a group project your grade will reflect your individual contribution to the task). Please use back of sheet, if necessary

Out of 10, I would give my group members a
_____/10
_____/10

CHECKLIST FOR CLASS WALK-ABOUT

Organ system team members: 1. _____
2. _____
3. _____

Member 1

- ☐ Engaged during work periods
- ☐ Using time wisely
- ☐ Providing ideas, comments, constructive criticism
- ☐ Continues to bring in materials responsible for
- ☐ Clarifies through questioning, if needed
- ☐ Uses encouraging words, no put-downs
- ☐ Consistently on task
- ☐ Other:

Member 2

- ☐ Engaged during work periods
- ☐ Using time wisely
- ☐ Providing ideas, comments, constructive criticism
- ☐ Continues to bring in materials responsible for
- ☐ Clarifies through questioning, if needed
- ☐ Uses encouraging words, no put-downs
- ☐ Consistently on task
- ☐ Other:

Member 3

- ☐ Engaged during work periods
- ☐ Using time wisely
- ☐ Providing ideas, comments, constructive criticism
- ☐ Continues to bring in materials responsible for
- ☐ Clarifies through questioning, if needed
- ☐ Uses encouraging words, no put-downs
- ☐ Consistently on task
- ☐ Other:

PROJECT COMPLETION CHECKLIST

Listed below are the components required from this activity. Within each component are the required elements. Please ensure that everything is completed before the day of the presentation. Please feel free to add additional elements to enrich any component.

Report:

- ☐ Cover page (title, names, course, teacher name, due date)
 - ☐ Function, importance and major organs within the organ system
 - ☐ An example of ONE disease which affects this system and how you can prevent/decrease your chance of getting the disease
 - ☐ Include how the impact of research in cell biology has helped your organ system
- _____/ 25

Pamphlet:

- ☐ Include a pamphlet which summaries ALL the key headings in your report
- _____/ 5

Model:

- ☐ Is it appropriate for the organ system (is the organ system labelled)
 - ☐ Are all the major organs included (and labelled)
 - ☐ Are the organs student-made (using household items ONLY)
- _____/ 30

Presentation/Evaluation:

- ☐ Dress up, play the part!
 - ☐ Are all the components of your presentation ready
 - ☐ Attach self and peer evaluation to the report
 - ☐ Attach the project rubric to the report
- _____/ 40

Our culminating activity is completed: _____
(ALL group members sign off when activity is completed)

Appendix G | Anecdotal Notes Form


Date	Student's Name	Notes

ASSESSMENT OF MY CONTRIBUTIONS

My name: _____ Date: _____

The name of other team members: _____

How I worked:

Mark an ✓ in the column that best describes your performance in the areas described below		Rarely	Sometimes	Often	Always
I followed written and oral instructions					
I worked without the teacher's help					
I worked in an organized way					
I helped my group overcome problems and/or conflicts					
I used my time wisely during work periods					
I treated everyone respectfully					
I valued others opinions					

Thinking about your learning.....

1. What were you trying to do?

2. What do you think went well?

3. What did you learn about the topic, yourself and others?


4. What would you do differently next time?

5. Please notice....

ASSESSMENT OF MY TEAM MEMBERS

My name: _____ Date: _____
The name of other team members: _____

How I worked:

Mark an ✓ in the column that best describes your performance in the areas described below		Rarely	Sometimes	Often	Always
We listened to everyone in the group					
We shared and discussed our ideas					
We helped each other					
We praised each other's work and ideas					
We all worked on the project					
We treated everyone respectfully					
We valued each others opinions					

Comments:

WEBSITE RESOURCES

www.brainpop.com

<http://www.can-do.com/uci/lessons98/BodyBuilder.html>

http://www.biology4kids.com/files/systems_main.html